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EXAMINER	
ZHOU, TING	
ART UNIT	**PAPER NUMBER**
2173	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/976,477	HAWKINS ET AL.	
	Examiner	Art Unit	
	Ting Zhou	2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-119* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-119* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

BA HUYNH
PRIMARY EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 3/7/02, 7/30/02, 1/15/04 and 4/20/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The applicants' claim of priority over Provisional Application No. 60/297,817, filed on 11 June 2001 has been noted.

Claim Objections

2. Claims 20 and 31 are objected to because of the following informalities:

a. In clam 20, the use of "at least one field values" on line 7 of the claim is grammatically incorrect. It is suggested that the applicant revise the phrase to -- at least one field value -- to correspond with number agreement.

b. In claim 31, the use of "responsive to responsive to" on line 5 of the claim is grammatically incorrect. It is suggested that the applicant revise the phrase to -- responsive to --.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 9-17, 21-25, 27-40, 42-48, 50-54, 56-58, 66, 69, 73-76, 78-87, 89-94, 102-105, 107-113 and 115-117 are rejected under 35 U.S.C. 102(b) as being anticipated by Grover et al. U.S. Patent 5,818,437.

Referring to claims 1, 66 and 102, Grover et al. teach a method, system and computer program product comprising a character input device (keyboard) (Figure 2) accepting a keystroke sequence comprising at least one keystroke (textual entry of keystroke sequences) (column 1, lines 45-53), each keystroke having a first value, and at least a subset of the key-strokes having a second value (each key can be interpreted as entry of a number or one of a plurality of characters; for example, as shown in Figure 1, key "1" represents characters "A", "F" and "G", along with the numerical digit "1") (column 2, lines 57-61 and Figure 1); a buffer, coupled to the character input device, for storing a keystroke sequence entered on the character input device (reference character "102" in Figure 1 shows the display of keystroke sequences entered by the user) (column 3, lines 64-67); a string handler, coupled to the buffer, for determining whether the keystroke sequence produces a valid result in a first context; responsive to the keystroke sequence producing a valid result (column 13, lines 13-19), outputting first feedback, the first feedback indicating keystroke input according to the first context (as the user enters a keystroke sequence, a plurality of words corresponding to the keystroke sequence is displayed; it is subsequently determined whether the displayed result is the desired result and if so, outputting a feedback by displaying the desired word on the display area) (for example, as can be seen from Figure 1, when the user enters the keystroke sequence "166", represented by pressing the keys "AFG", "DHI", "DHI", a plurality of corresponding character sequences is displayed; since a valid result of "Aid" was found in this context, a feedback representing the desired word "aid" is displayed in the display area shown by reference character "101") (column 3, lines 64-66, column 4, lines 34-60 and column 14, lines 7-15); an output device, coupled to the string handler for: responsive to the keystroke sequence not producing a valid result in the first

context, determining whether the keystroke sequence produces a valid result in a second context; and responsive to the keystroke sequence producing a valid result in the second context, outputting second feedback, the second feedback indicating keystroke input according to the second context (for example, if the user intended keystroke was the numeric digits "166", then the intended result in the first context of character input represented by the input of "AFG", "DHI", "DHI" would not be found; consequently, it is determined if a valid result can be found in the second context, or numerical context; since the intended result of "166" is shown in the selection window represented by reference character "107", this valid result can be chosen and consequently displayed on the display area "101") (column 4, lines 61-64 and column 14, lines 15-26 and further shown in Figure 1).

Referring to claims 37, 82 and 111, Grover et al. teach a method, system and computer program product comprising a character input device (keyboard) (Figure 2) accepting a keystroke sequence comprising at least one keystroke (textual entry of keystroke sequences) (column 1, lines 45-53), each keystroke having a first value, and at least a subset of the key-strokes having a second value (each key can be interpreted as entry of a number or one of a plurality of characters; for example, as shown in Figure 1, key "1" represents characters "A", "F" and "G", along with the numerical digit "1") (column 2, lines 57-61 and Figure 1); a buffer, coupled to the character input device, for storing a keystroke sequence entered on the character input device (reference character "102" in Figure 1 shows the display of keystroke sequences entered by the user) (column 3, lines 64-67); a string handler, coupled to the buffer, for determining whether the keystroke sequence produces a valid result in a first context; responsive to the keystroke sequence producing a valid result (column 13, lines 13-19), outputting first

feedback, the first feedback indicating keystroke input according to the first context (as the user enters a keystroke sequence, a plurality of words corresponding to the keystroke sequence is displayed; it is subsequently determined whether the displayed result is the desired result and if so, outputting a feedback by displaying the desired word on the display area) (for example, as can be seen from Figure 1, when the user enters the keystroke sequence "166", represented by input of keys "AFG", "DHI", "DHI", a plurality of corresponding character sequences are displayed; since a valid result of "aid" was found in this context, a feedback representing the desired word "aid" is displayed in the display area shown by reference character "101") (column 3, lines 64-66, column 4, lines 34-60 and column 14, lines 7-15); determining whether the keystroke sequence produces a valid result in a second context; and an output device, coupled to the string handler for: responsive to the keystroke sequence producing a valid result in the second context, outputting second feedback, the second feedback indicating keystroke input according to the second context (determining whether the input sequence of "AFG", "DHI", "DHI" produces a valid numerical digit result; since the valid result of "166" is shown in the selection window represented by reference character "107", this valid result can be chosen and consequently displayed on the display area "101") (column 4, lines 61-64 and column 14, lines 15-26 and further shown in Figure 1).

Referring to claims 2 and 38, Grover et al. teach responsive to the keystroke sequence producing a valid result in the first context, performing a first operation corresponding to the first context, using the first value for each keystroke (if it is determined that the desired word of "aid" is found in the first context of characters, then a first operation of displaying the word "aid" in

the text output area shown by reference character "101" is performed) (column 3, lines 64-66, column 4, lines 34-60, column 14, lines 7-15 and further shown in Figure 1).

Referring to claims 3 and 39, Grover et al. teach responsive to the keystroke sequence producing a valid result in the second context, performing a second operation corresponding to the second context, using the second value for each keystroke (if it is determined that the desired result of "166" is found in the second context of numeric digits, then a second operation of displaying the result "166" in the text output area shown by reference character "101" is performed) (column 4, lines 61-64 and column 14, lines 15-26 and further shown in Figure 1).

Referring to claims 4 and 40, Grover et al. teach the first feedback indicates the first value for each keystroke; and the second feedback indicates the second value for each keystroke (the first feedback indicates the first value of the character word "aid" on the display area, while the second feedback indicates the second value of numerical digits "166" on the display area) (Figure 1).

Referring to claims 5 and 42, Grover et al. teach the first feedback comprises visual feedback and the second feedback comprises visual feedback (the first feedback of displaying "aid" in the text output display area and the second feedback of displaying "166" in the text output display area both provide visual feedback to the user regarding the selected item) (column 3, lines 64-66, column 14, lines 7-26 and Figure 1).

Referring to claim 9, Grover et al. teach at least one of the contexts comprises accepting input for a directory filtering operation on a plurality of directory records (when keystrokes are input into the system, the dictionary, or directory containing a plurality of words, or directory

records, are filtered to produce the matching words) (column 2, lines 51-55 and column 4, lines 48-56).

Referring to claims 10 and 44, Grover et al. teach the first context comprises accepting input for a directory filtering operation on a plurality of directory records (when keystrokes are input into the system, the dictionary, or directory containing a plurality of words, or directory records, are filtered to produce the matching words) (column 2, lines 51-55 and column 4, lines 48-56).

Referring to claims 11, 45, 73 and 85, 103 and 113, Grover et al. teach the directory filtering operation is iterative (a dictionary, or directory look-up is performed for each key of the entered keystroke to locate possible matching words) (column 4, lines 48-56; this is further shown in the example recited on column 11, lines 16-67 and column 12, lines 1-21 and correspondingly shown in Figures 7a-7h).

Referring to claims 12, 74 and 104, Grover et al. teach responsive to the keystroke sequence producing a valid result in the first context, performing the directory filtering operation using the first value for each of the accepted keystrokes (as shown in Figure 7a, the first value of "AFG" for the accepted keystrokes is used to filter the dictionary to produce several possible corresponding results) (column 11, lines 23-32).

Referring to claim 13, Grover et al. teach responsive to the keystroke sequence producing a valid result in the first context, performing the directory filtering operation using the accepted keystrokes (as shown in Figure 1, the accepted keystrokes of "AFG", "DHI" and "DHI" are used to filter the dictionary to produce several possible corresponding results) (column 2, lines 51-55 and column 4, lines 48-56), wherein determining the keystroke sequence produces a valid result

in a first context comprises determining whether the performed directory filtering operation produces at least one valid result for the keystroke sequence (determining whether the list of displayed corresponding entries to the input keystroke contains the desired entry) (column 1, lines 45-58).

Referring to claim 14, Grover et al. teach responsive to the keystroke sequence producing a valid result in the first context, performing the directory filtering operation using the accepted keystrokes (as shown in Figure 1, the accepted keystrokes of "AFG", "DHI" and "DHI" are used to filter the dictionary to produce several possible corresponding results) (column 2, lines 51-55 and column 4, lines 48-56), wherein each directory record comprises contents, and wherein performing the directory filtering operation comprises comparing the keystroke sequence with the contents of at least one directory record (each directory record, or word in the dictionary comprises content, such as the characters that make up the word, and the input keystroke sequence is compared with each letter of the word in the dictionary) (column 4, lines 48-56).

Referring to claims 15 and 21, Grover et al. teach the first feedback comprises at least one matching directory record (words which match the keystroke sequence are presented to the user on a display) (column 1, lines 53-55).

Referring to claim 16, Grover et al. teach responsive to the keystroke sequence producing a valid result in the first context, performing the directory filtering operation using the accepted keystrokes (as shown in Figure 1, the accepted keystrokes of "AFG", "DHI" and "DHI" are used to filter the dictionary to produce several possible corresponding results) (Grover et al.: column 2, lines 51-55 and column 4, lines 48-56), wherein each directory record comprises at least one field value (for example, each word in the dictionary comprise the field value of characters

associated with the word), and wherein the directory filtering operation comprises comparing the keystroke sequence with at least one field value in at least one directory record (comparing the keystroke sequence with the characters of the words in the dictionary) (column 1, lines 51-55).

Referring to claim 17, Grover et al. teach the first feedback comprises at least one matching directory record (words which match the keystroke sequence are presented to the user on a display) (column 1, lines 53-55).

Referring to claims 22 and 46, Grover et al. teach accepting an additional keystroke, the additional keystroke having at least a first value, appending the additional keystroke to the keystroke sequence and repeating the previous steps (as can be seen from Figures 7e and 7f, an additional keystroke of "DHI", having at least a first value of "D", is inputted and accepted to the keystroke sequence of "AFG", "DHI"; and the steps of finding the corresponding valid items for the sequence "AFG" "DHI" are repeated for the sequence "AFG", "DHI", "DHI") (column 11, lines 50-67).

Referring to claims 23 and 47, Grover et al. teach accepting a backspace keystroke (reference character "106" in Figure 1), deleting a keystroke from the keystroke sequence and repeating the previous steps (accepting the keystroke for deletion of the last word entered) (column 3, line 67, column 4, line 1 and column 8, lines 45-50).

Referring to claims 24, 48, 75, 86 and 105, Grover et al. teach at least one of the contexts comprises accepting input for a direct entry operation (for example, the pressing of keys "1", "6", "6" actually yields the direct result of "166", as shown by reference character "212" on the display area "107" in Figure 1).

Referring to claims 25, 76 and 87, Grover et al. teach the first context comprises accepting input for a direct entry operation (for example, the pressing of keys "1", "6", "6" actually yields the direct result of "166", as shown by reference character "212" on the display area "107" in Figure 1).

Referring to claims 27, 50 and 107, Grover et al. teach determining whether all of the accepted keystrokes have a numeric value (each sequence of keystrokes may be interpreted as entry of a number; for example, all of the accepted keystrokes of "AFG", "DHI", "DHI" in Figure 1 have a numeric value, namely "1", "6", "6") (column 2, lines 57-67).

Referring to claim 28, Grover et al. teach responsive to the keystroke sequence producing a valid result in the first context, performing the direct entry operation using the first value for each of the accepted keystrokes (as shown in Figure 1, the first value of the accepted keystroke, "AFG", is interpreted as the direct entry of the numeric digit "1" associated with the pressed key) (column 2, lines 57-67).

Referring to claim 29, Grover et al. teach responsive to the keystroke sequence producing a valid result in the first context, performing the direct entry operation using the accepted keystrokes (as shown in Figure 1, the accepted keystrokes of the sequence "AFG", "DHI", "DHI" are used as the direct entry of numeric digits "1", "6", "6" associated with the pressed keys) (column 2, lines 57-67).

Referring to claims 30, 51, 78, 89 and 108, Grover et al. teach the first context comprises accepting input for a directory filtering operation (accepting input as letters to filter the dictionary for the desired word) (column 1, lines 46-58), and the second context comprises accepting input for a direct entry operation (accepting input as numeric digits; for example, the

pressing of keys "1", "6", "6" actually yields the direct result of "166", as shown by reference character "212" on the display area "107" in Figure 1) (column 2, lines 57-67).

Referring to claim 31, Grover et al. teach responsive to the keystroke sequence producing a valid result in the first context, performing the directory filtering operation using the first value for each of the accepted keystrokes (using the first value, or the character value to filter the dictionary for the intended word), and responsive to the keystroke sequence not producing a valid result in the first context and producing a valid result in the second context, performing the direct entry operation using the second value for each of the accepted keystrokes (using the second value, or numeric value for each of the input keystrokes) (column 1, lines 46-58, column 2, lines 57-67, column 4, lines 34-64 and Figures 7a-7h).

Referring to claims 32, Grover et al. teach determining whether the keystroke sequence produces a valid result in a first context comprises determining whether the performed directory filtering operation produces at least one valid result for the accepted keystroke (determining whether the list of displayed entries corresponding to the input keystroke contains the desired entry) (column 1, lines 45-58), and determining whether the keystroke sequence produces a valid result in a second context comprises determining whether all of the accepted keystrokes have a numeric value (each sequence of keystrokes may be interpreted as entry of a number; for example, all of the accepted keystrokes of "AFG", "DHI", "DHI" in Figure 1 have a numeric value, namely "1", "6", "6") (column 2, lines 57-67).

Referring to claims 33 and 79, Grover et al. teach each first value comprises one selected from the group consisting of a letter and a punctuation symbol and each second value comprises a number (for example, the top left key shown in Figure 1 has a first value selected from a group

consisting of a letter such as "A" and a punctuation symbol, such as "!", and a second value of the numeric digit "1") (column 4, lines 34-39).

Referring to claims 34 and 80, Grover et al. teach each first value comprises one selected from the group consisting of a letter and a punctuation symbol, and each second value comprises one selected from the group consisting of a number and a punctuation symbol (for example, the top left key shown in Figure 1 has a first value selected from a group consisting of a letter, such as "A" and a punctuation symbol, such as "!", and a second value comprises one selected from the group consisting of the number "1" and a punctuation mark, such as "%") (column 4, lines 34-39).

Referring to claims 35, 81 and 109, Grover et al. teach responsive to at least one of the accepted keystrokes not being valid in one of the contexts, determining that the other context is intended (for example, if the user intended keystroke was the numeric digits "166", then the intended result in the first context of character combinations represented by the pressing of "AFG", "DHI", "DHI" would not be found; consequently, it is determined if a valid result can be found in the second context, or numerical context) (column 4, lines 61-64 and column 14, lines 15-26 and further shown in Figure 1).

Referring to claims 36 and 110, Grover et al. teach responsive to the keystroke sequence not producing a valid result in one of the contexts, performing an action using the keystroke sequence according to the other contexts (for example, if the user intended keystroke was the numeric digits "166", then the intended result in the first context of character combinations represented by the pressing of "AFG", "DHI", "DHI" would not be found; consequently, it is determined if a valid result can be found in the second context, or numerical context; since the

intended result of "166" is shown in the selection window represented by reference character "107", this valid result can be chosen and consequently displayed on the display area "101") (column 4, lines 61-64 and column 14, lines 15-26 and further shown in Figure 1).

Referring to claims 43, 84 and 112, Grover et al. teach outputting the first visual feedback at a first location on a display screen (first visual feedback of the word "aid" shown at a first location represented by reference character "207"), and outputting the second visual feedback at a second location on a display screen (second visual feedback of the number "166" at a second location represented by reference character "212" on the display screen represented by reference character "107") (Figure 1).

Referring to claims 52 and 90, Grover et al. teach a method and system comprising initiating a first string (user entry of keystroke sequence) (column 1, lines 45-53); an input device for accepting a keystroke (Figure 2); a buffer, coupled to the input device, for appending a first value of the keystroke to the first string (as can be seen from Figures 7e and 7f, an additional keystroke of "DHI", having at least a first value of "D", is inputted and accepted to the keystroke sequence of "AFG", "DHI"); a string handler, coupled to the buffer, for determining whether all values in the first string can be converted to valid numeric values (each sequence of keystrokes may be interpreted as entry of a number; for example, all of the accepted keystrokes of "AFG", "DHI", "DHI" in Figure 1 have a numeric value, namely "1", "6", "6") (column 2, lines 57-67); a numeric string generator, coupled to the string handler, for, responsive to determining that all values in the first string can be converted to valid numeric values, generating a numeric string corresponding to the first string and outputting first feedback comprising the numeric string (for example, generating and displaying the output string "166" corresponding to the entered string of

"AFG", "DHI", "DHI"); a directory lookup engine, coupled to the string handler, for, determining whether any directory records match the first string (determining whether the dictionary contains any records, or words that match the entered string of "AFG", "DHI", "DHI"); and an output device, for: responsive to at least one directory record matching the first string, outputting second feedback comprising a list of the at least one directory record matching the first string (outputting the records that match the entered string, such as "aid" and "add" in the display panel shown by reference character "107" in Figure 1). This is further recited in column 1, lines 44-58.

Referring to claim 53, Grover et al. teach repeating the steps from accepting a keystroke to outputting a list of matching directory records (as additional input characters are received, a dictionary, or directory look-up is performed for each key of the entered keystroke to locate possible matching words) (column 4, lines 48-56; this is further shown in the example recited on column 11, lines 16-67 and column 12, lines 1-21 and correspondingly depicted in Figures 7a-7h).

Referring to claim 54, Grover et al. teach responsive to determining that at least one value in the first string cannot be converted to a valid numeric value, deleting any previously output first feedback comprising the numeric string (when the user selects the "Delete" key for example, which does not have a numeric value equivalent, the system deletes the last input keystroke and therefore, the feedback list of corresponding matched items is deleted) (column 8, lines 45-50 and Figure 1).

Referring to claims 56, 92 and 115, Grover et al. teach a method, system and computer program product comprising an input device (Figure 2) for accepting input having at least two

possible values (each input keystrokes has at least two possible values of a character value and a numeric value) (column 1, lines 46-48 and column 2, lines 57-61), and an output device coupled to the input device (Figure 2) for responsive to exactly one of the possible values being valid, outputting feedback according to the one possible value and determining an intended context responsive to the one possible value (for example, if the user intended interpretation of the keystroke sequence "AFG", "DHI", "DHI" is the word "aid", then only the values "a", "i" and "d" for the respective keystrokes are valid; it is then determined that the intended context of the sequence is character input representing the word "aid" and the desired word "aid" can then be output, or displayed in the text window shown by reference character "101" in Figure 1) (column 1, lines 46-58, column 11, lines 17-67 and column 12, lines 1-23).

Referring to claims 57, 94 and 116, Grover et al. teach responsive to more than one of the possible values being valid, outputting feedback according a value corresponding to a default context (when an entered sequence of keystrokes, such as "AFG", "DHI", "DHI" produces more than one result, such as the list of possible results shown in Figure 1, containing "aid", "add" "g", "166" and "<cancel>", the list of possible results are output according to a default context of the most frequently used item displayed first and highlighted) (column 11, lines 45-50 and 63-67).

Referring to claims 58, 93 and 117, Grover et al. teach responsive to more than one of the possible values being valid, concurrently outputting feedback according to each of the valid values (each valid interpretation of the sequence "AFG", "DHI", "DHI" are displayed in the selection list menu window shown in Figure 1) (column 5, lines 60-64).

Referring to claims 69 and 83, Grover et al. teach an output device comprises a display screen (Figure 2), the character input device comprises a keyboard (Figure 2) and each character input device element comprises a key (column 4, lines 34-37).

Referring to claim 91, Grover et al. teach responsive to at least one directory record matching the first string and all values in the first string being convertible to valid numeric values, the output device outputs first feedback comprising a list of the at least one directory record matching the first string and concurrently outputs second feedback comprising the numeric string (the display area represented by reference character "107" outputs feedback comprising a list of the directory records matching the first string, such as output represented by reference characters "207" and "210", and concurrently outputs second feedback comprising the numeric string "166", represented by reference character "212") (Figure 1).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 59-65, 95-101 and 118-119 are rejected under 35 U.S.C. 102(e) as being anticipated by Laursen et al. U.S. Patent 6,288,718.

Referring to claims 59 and 118, Laursen et al. teach a method and computer program product comprising accepting a character sequence comprising at least one character, each character having a value (user enters alphabetical characters from a numerical keypad) (column 2, lines 11-13); in response to each of at least a subset of the characters, iteratively filtering a display of the directory by (displaying a progressively reduced list of items with the entered characters until the desired index identifying the directory record is found) (column 2, lines 13-21 and 27-40): for each record, determining whether the character sequence matches at least a portion of at least one selected from the group consisting of at least one searchable field in the record (each record can be indexed and searched by a field such as a last name), at least one field derived from at least one field in the record (such as a work phone number), and at least one field generated by combining at least two fields in the record (such as the home address associated with a particular record's last name and home phone number) (column 4, lines 50-61 and Figures 3A-3L); and displaying at least a subset of records for which the determination indicates a match (displaying the list of records that start with the input character) (column 2, lines 11-13). This is further shown in the example recited on column 6.

Referring to claim 95, Laursen et al. teach a system comprising a directory having a plurality of records (database containing records) (column 2, lines 11-13), each record having at

least two searchable fields (column 4, lines 51-61); a character input device comprising a plurality of character input device elements, each character input device element having at least one value (entering characters from a numerical keypad) (column 2, lines 11-16); a buffer, coupled to the character input device, for storing a character sequence entered on the character input device, the character sequence comprising at least one character (memory for receiving a list of user activated keys) (column 11, lines 8-13); a directory lookup engine, coupled to the directory and to the buffer, for: for each record, determining whether the character sequence matches at least a portion of at least one selected from the group consisting of at least one searchable field in the record (each record can be indexed and searched by a field such as a last name), at least one field derived from at least one field in the record (such as a work phone number), and at least one field generated by combining at least two fields in the record (such as the home address associated with a particular record's last name and home phone number) (column 4, lines 50-61 and Figures 3A-3L), and displaying at least a subset of records for which the determination indicates a match (displaying the list of records that start with the input character) (column 2, lines 11-13). This is further shown in the example recited on column 6.

Referring to claims 60 and 96, Laursen et al. teach determining whether the character sequence matches at least a portion of at least one searchable field in the record (such as the last name) (column 5, lines 64-67 and column 6, lines 1-57).

Referring to claims 61 and 97, Laursen et al. teach determining whether the character sequence matches at least a portion of at least one field derived from at least one field in the record (such as a work phone number) (column 4, lines 50-61 and Figures 3A-3L).

Referring to claims 62 and 98, Laursen et al. teach determining whether the character sequence matches at least a portion of at least one field generated by combining at least two fields in the record (such as the home address associated with a particular record's last name and home phone number) (column 4, lines 50-61 and Figures 3A-3L).

Referring to claim 63, Laursen et al. teach accepting an additional character, appending the additional character to the character sequence (inputting a second character) (column 6, lines 34-53), for each displayed record, determining whether the character sequence matches at least a portion of at least one selected from the group consisting of at least one searchable field in the record (each record can be indexed and searched by a field such as a last name), at least one field derived from at least one field in the record (such as a work phone number), and at least one field generated by combining at least two fields in the record (such as the home address associated with a particular record's last name and home phone number) (column 4, lines 50-61 and Figures 3A-3L), and for each displayed record, responsive to the character sequence not matching, deleting the record from the display (the number of matched items corresponding with each additional input decreases, and therefore, when a new input is entered, the records on the display that no longer match the input sequence are deleted) (column 11-16 and column 6, lines 1-53).

Referring to claim 64, Laursen et al. teach accepting a backspace character, deleting the last character from the character sequence, for each displayed record, determining whether the character sequence matches at least a portion of at least one selected from the group consisting of at least one searchable field in the record (each record can be indexed and searched by a field such as a last name), at least one field derived from at least field in the record (such as a work phone number), and at least one field generated by combining at least two fields in the record

(such as the home address associated with a particular record's last name and home phone number) (column 4, lines 50-61 and Figures 3A-3L), and displaying at least a subset of records for which determination indicates a match. (displaying the list of records that start with the input character) (column 2, lines 11-13). This is further shown in the example recited on column 6.

Referring to claims 65, 100 and 119, Laursen et al. teach a method, system and computer program product comprising a character input device (keypad) (column 5, lines 66-67), for accepting a character sequence comprising at least one character, each character having a value (user enters alphabetical characters from a numerical keypad) (column 2, lines 11-13), a directory filter, coupled to the input device, for filtering a directory based on comparison of the accepted character sequence with at least two searchable fields and displaying at least a subset of the filtered directory (displaying a progressively reduced list of items with the entered characters until the desired directory record is found; each record can be indexed and therefore filtered by a plurality of fields, including name, work phone, home phone, etc.) (column 2, lines 13-21 and 27-40 and column 4, lines 51-61), and a display, coupled to the directory filter, for displaying at least a subset of the filtered directory (displaying a progressively reduced list of filtered items from the database) (column 2, lines 13-16).

Referring to claims 99 and 101, Laursen et al. teach the output device comprises a display screen (column 2, lines 45-48), the character input device comprises a keyboard (keypad) (column 5, lines 66-67), and each character input device element comprises a key (input interface comprising keys for entering data) (column 6, lines 2-3). This if further shown in Figure 8.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 6-8, 18-20, 41, 55 and 70-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grover et al. U.S. Patent 5,818,437, as applied to the claims above, and Laursen et al. U.S. Patent 6,288,718.

Referring to claims 6, 70 and 72, Grover et al. teach all of the limitations as applied to the claim 1 and 66 above. However, Grover et al. fail to explicitly teach outputting an invalidity indicator. Laursen et al. teach a method for filtering a directory and displaying records (Laursen et al.: column 2, lines 11-21) similar to that of Grover et al. In addition, Laursen et al. further teach indicating an invalid entry if the entered sequence cannot produce a valid result, or be matched up with the directory records (Laursen et al.: column 7, lines 20-31 and further shown in Figure 3L). It would have been obvious to one of ordinary skill in the art, having the teachings of Grover et al. and Laursen et al. before him at the time the invention was made, to modify the directory filtering method for finding a valid result of Grover et al. to include the output of an invalidity indicator, taught by Laursen et al. One would have been motivated to make such a combination in order to allow users of portable devices with a small display screen to easily view and track the progress and result of their search query.

Referring to claims 7-8 and 71, Grover et al. teach all of the limitations as applied to claims 1 and 66 above. Specifically, Grover et al. teach providing auditory and visual feedback,

or output to the user (Grover et al.: column 3, lines 1-14, column 4, lines 13-14 and column 7, lines 7-24). However Grover et al. fail to explicitly teach an invalidity indicator. Laursen et al. teach a method for filtering a directory and displaying records (Laursen et al.: column 2, lines 11-21) similar to that of Grover et al. In addition, Laursen et al. further teach indicating an invalid entry if the entered sequence cannot produce a valid result, or be matched up with the directory records (Laursen et al.: column 7, lines 20-31 and further shown in Figure 3L). It would have been obvious to one of ordinary skill in the art, having the teachings of Grover et al. and Laursen et al. before him at the time the invention was made, to modify the visual and auditory information feedback of Grover et al. to include the output of an invalidity indicator, taught by Laursen et al. One would have been motivated to make such a combination in order to allow users of portable devices with a small display screen to easily view and track the progress and result of their search query.

Referring to claim 18, Grover et al. teach all of the limitations as applied to claims 1, 9 and 10 above. Specifically, Grover et al. teach responsive to the keystroke sequence producing a valid result in the first context, performing the directory filtering operation using the accepted keystrokes (as shown in Figure 1, the accepted keystrokes of "AFG", "DHI" and "DHI" are used to filter the dictionary to produce several possible corresponding results) (Grover et al.: column 2, lines 51-55 and column 4, lines 48-56). However, Grover et al. fail to explicitly teach comparing the keystroke sequences with at least two field values in at least one directory record. Laursen et al. teach a method for filtering a directory and displaying records (Laursen et al.: column 2, lines 11-21) similar to that of Grover et al. In addition, Laursen et al. further teach comparing the keystroke sequence with at least two field values in at least one directory record

(each record can be indexed and therefore filtered by a plurality of fields, including name, work phone, home phone, etc.) (Laursen et al.: column 2, lines 13-21 and 27-40 and column 4, lines 51-61). It would have been obvious to one of ordinary skill in the art, having the teachings of Grover et al. and Laursen et al. before him at the time the invention was made, to modify the directory filtering method of Grover et al. to include the plurality of field values taught by Laursen et al. One would have been motivated to make such a combination in order to accommodate devices with small display screens, such as cellular phones and personal digital assistants, facilitating the user to navigate through a list of items and view only a desired portion of the desired record without causing visual disturbance to the user.

Referring to claim 19, Grover et al. teach all of the limitations as applied to claim 1, 9 and 10 above. Specifically, Grover et al. teach responsive to the keystroke sequence producing a valid result in the first context, performing the directory filtering operation using the accepted keystrokes (as shown in Figure 1, the accepted keystrokes of "AFG", "DHI" and "DHI" are used to filter the dictionary to produce several possible corresponding results) (Grover et al.: column 2, lines 51-55 and column 4, lines 48-56). However, Grover et al. fail to explicitly teach each directory record comprises at least two field values, and wherein the directory filtering operation comprises comparing the keystroke sequence with at least one value derived from at least one field value in at least one directory record. Laursen et al. teach a method for filtering a directory and displaying records (Laursen et al.: column 2, lines 11-21) similar to that of Grover et al. In addition, Laursen et al. further teach each directory record comprises at least two field values (such as a name, phone number, etc.) (Laursen et al.: column 4, lines 50-60), and wherein the directory filtering operation comprises comparing the keystroke sequence with at least one value

derived from at least one field value in at least one directory record (for example, using the keystroke input value of "bakers" to compare with the values of "Baker, Jennifer", "Bakers, Cash &", etc., derived from the last name field) (Laursen et al.: column 6, lines 54-57). It would have been obvious to one of ordinary skill in the art, having the teachings of Grover et al. and Laursen et al. before him at the time the invention was made, to modify the directory filtering method of Grover et al. to include the plurality of field values taught by Laursen et al. One would have been motivated to make such a combination in order to accommodate devices with small display screens, such as cellular phones and personal digital assistants, facilitating the user to navigate through a list of items and view only a desired portion of the desired record without causing visual disturbance to the user.

Referring to claim 20, Grover et al. teach all of the limitations as applied to the claims above. Specifically, Grover et al. teach responsive to the keystroke sequence producing a valid result in the first context, performing the directory filtering operation using the accepted keystrokes (as shown in Figure 1, the accepted keystrokes of "AFG", "DHI" and "DHI" are used to filter the dictionary to produce several possible corresponding results) (Grover et al.: column 2, lines 51-55 and column 4, lines 48-56). However, Grover et al. fail to explicitly teach comparing the keystroke sequence with at least one field value in at least one directory record and with at least one value derived from at least one field in at least one directory record. Laursen et al. teach a method for filtering a directory and displaying records (Laursen et al.: column 2, lines 11-21) similar to that of Grover et al. In addition, Laursen et al. further teach comparing the keystroke sequence with at least one field value in at least one directory record (each record can be indexed and searched by a field such as a last name) and with at least one

value derived from at least one field in at least one directory record (such as a work phone number associated with a name) (column 4, lines 50-61 and Figures 3A-3L). It would have been obvious to one of ordinary skill in the art, having the teachings of Grover et al. and Laursen et al. before him at the time the invention was made, to modify the directory filtering method of Grover et al. to include the plurality of field values taught by Laursen et al. One would have been motivated to make such a combination in order to accommodate devices with small display screens, such as cellular phones and personal digital assistants, facilitating the user to navigate through a list of items and view only a desired portion of the desired record without causing visual disturbance to the user.

Referring to claim 41, Grover et al. teach all of the limitations as applied to claim 37 above. However, Grover et al. fail to explicitly teach responsive to at least one of the accepted keystrokes being invalid in one of the contexts, deleting feedback indicating keystroke input according to the one of the contexts. Laursen et al. teach a method for filtering a directory and displaying records (Laursen et al.: column 2, lines 11-21) similar to that of Grover et al. In addition, Laursen et al. further teach responsive to at least one of the accepted keystrokes being invalid in one of the contexts, deleting feedback indicating keystroke input according to one of the contexts (when an accepted input fails to produce a valid result, the feedback of matching records is deleted and "no match" is displayed instead) (Laursen et al.: column 7, lines 20-31 and Figure 3L). It would have been obvious to one of ordinary skill in the art, having the teachings of Grover et al. and Laursen et al. before him at the time the invention was made, to modify the directory filtering method for finding a valid result of Grover et al. to include deleting feedback when an accepted input produces an invalid result, as taught by Laursen et al. One would have

been motivated to make such a combination in order to allow users of portable devices with a small display screen to easily view and track the progress and result of their search query.

Referring to claim 55, Grover et al. teach all of the limitations as applied to claim 55 above. However, Grover et al. fail to explicitly teach responsive to no directory record matching the first string, deleting any previously output second feedback comprising a list of the at least one directory record. Laursen et al. teach a method for filtering a directory and displaying records (Laursen et al.: column 2, lines 11-21) similar to that of Grover et al. In addition, Laursen et al. further teach responsive to no directory records matching the first string, deleting any previously output second feedback comprising a list of the least one directory record (when an accepted input fails to produce a valid result, the feedback of matching records is deleted and "no match" is displayed instead) (Laursen et al.: column 7, lines 20-31 and Figure 3L). It would have been obvious to one of ordinary skill in the art, having the teachings of Grover et al. and Laursen et al. before him at the time the invention was made, to modify the directory filtering method for finding a valid result of Grover et al. to include deleting feedback when no matching results can be found, as taught by Laursen et al. One would have been motivated to make such a combination in order to allow users of portable devices with a small display screen to easily view and track the progress and result of their search query.

6. Claims 26, 49, 67-68, 77, 88, 106 and 114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grover et al. U.S. Patent 5,818,437, as applied to the claims above, and Shechter et al. U.S. Publication 2002/0021311.

Referring to claims 26, 49, 77, 88, 106 and 114, Grover et al. teach all of the limitations as applied to the claims above. Specifically, Grover et al. teach a direct entry operation. However, Grover et al. fail to explicitly teach a telephone number direct entry operation. Shechter et al. teach a direct entry operation on a reduced keyboard (Shechter et al.: page 4, paragraph 0116) similar to that of Grover et al. In addition, Shechter et al. further teach the direct entry operation comprises a telephone number direct entry operation (page 4, paragraph 0117, page 5, paragraph 0135 and page 8, paragraphs 0177-0178). It would have been obvious to one of ordinary skill in the art, having the teachings of Grover et al. and Shechter et al. before him at the time the invention was made, to modify the direct entry operation of Grover et al. to include the entry of a telephone number, taught by Shechter et al. One would have been motivated to make such a combination in order to increase the capabilities and functionalities of small screen handheld devices.

Referring to claim 67, Grover et al. teach all of the limitations as applied to claim 66 above. However, Grover et al. fail to teach retrieving a telephone number from a directory record identified by the first value for each keystroke, and a dialer, for, responsive to the keystroke sequence producing a valid result in the first context, dialing a retrieved telephone number. Shechter et al. teach a system for receiving ambiguous input from a reduced keyboard (Shechter et al.: page 2, paragraph 0027 and page 4, paragraph 0116) similar to that of Grover et al. In addition, Shechter et al. further teach retrieving a telephone number from a directory record identified by the first value for each keystroke (receiving a sequence of key presses and retrieving the matching telephone numbers, and dialing the retrieved telephone number) (page 8, paragraphs 0177-0178 through page 9, paragraphs 0179-0181) and responsive to the keystroke

sequence producing a valid result in the first context, a dialer dialing the retrieved telephone number (dialing the retrieved telephone number from the telephone number directory) (page 8, paragraph 0178). It would have been obvious to one of ordinary skill in the art, having the teachings of Grover et al. and Shechter et al. before him at the time the invention was made, to modify the ambiguous input system of Grover et al. to include the telephone dialer taught by Shechter et al. One would have been motivated to make such a combination in order to increase the capabilities and functionalities of small screen handheld devices.

Referring to claim 68, Grover et al. teach all of the limitations as applied to claim 66 above. Specifically, Grover et al. teach determining when the keystroke sequence does not produce a valid result in the first context and produces a valid result in the second context. However, Grover et al. fail to teach dialing a telephone number specified by the second value for each keystroke. Shechter et al. teach a system for receiving ambiguous input from a reduced keyboard (Shechter et al.: page 2, paragraph 0027 and page 4, paragraph 0116) similar to that of Grover et al. In addition, Shechter et al. further teach a dialer for dialing a telephone number specified by the second value for each keystroke (dialing the retrieved telephone number from the telephone number directory) (page 8, paragraphs 0177-0178 through page 9, paragraphs 0179-0181). It would have been obvious to one of ordinary skill in the art, having the teachings of Grover et al. and Shechter et al. before him at the time the invention was made, to modify the ambiguous input system of Grover et al. to include the telephone dialer taught by Shechter et al. One would have been motivated to make such a combination in order to increase the capabilities and functionalities of small screen handheld devices.

7. The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach similar methods for filtering directories with ambiguous inputs.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ting Zhou whose telephone number is (703) 305-0328. The examiner can normally be reached on Monday - Friday 8:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca can be reached on (703) 308-3116. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 26, 2004

BA HUYNH
PRIMARY EXAMINER